

REMARKS/ARGUMENTS

Claims 1 and 3-44 are pending in the present application. Claims 1 and 5 have been amended, and claim 2 has been cancelled. Claim 44 has been added to more fully claim Applicant's invention and is believed to be allowable over the cited references. For at least the reasons stated below, Applicant asserts that all claims are in condition for allowance, and, therefore, Applicant respectfully requests the Examiner's reconsideration of this matter.

CLAIM REJECTIONS UNDER 35 U.S.C. §102

Claim 1 is rejected under 35 U.S.C. § 102(b) as being anticipated by Norman et al., U.S. Patent No. 5,243,340. Applicant respectfully opposes this rejection and asserts that not every element of every claim is taught by the Norman reference. In light of the below remarks and amendments, Applicant respectfully requests reconsideration and that Examiner's §102 rejections be withdrawn.

MPEP § 2131 provides:

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim...

Because not every element of every claim is taught by the reference, the Examiner's § 102 rejections are unsupported by the art and should be withdrawn.

1. Present Invention

The present invention provides for a system for monitoring light sources and monitoring the electrical operating characteristics of those light sources. Such monitoring may include, inter alia, measuring the input and the output of a luminaire for both current and voltage. The system also provides for displaying the operative status of a luminaire on a monitor.

2. Measuring the Electrical Operating Characteristics of the Luminaire

Initially, the architecture of the Norman system is directed towards creating an appropriate response to inoperative lights. For example, if a light's operational status is inoperative, the Norman reference teaches various appropriate responses: providing two light sources at each lighting location and illuminating one when the other fails, col. 3, lines 17-23, and activating a battery backup when the voltage to one of the lights fails, col. 6, lines 64-68. It is clear from reading the Norman reference as a whole that it is not concerned with measuring

electrical operating characteristics of luminaires. Rather, Norman merely measures whether or not a light is operative, as evidenced by the responses described in the reference. Norman does not describe measuring the more subtle characteristics of a light, such as current flow and voltage level, that may determine when a light has an operating characteristic somewhere between operative and inoperative.

Claim 1 of the present invention requires measuring the electrical operating characteristics of a luminaire, where the electrical operating characteristics include the current and voltage at an input and output of the luminaire. In contrast, Norman merely teaches measuring the status of a light, see abstract, and controlling the intensity of a light, see col. 6, lines 14-18. Nowhere does Norman describe measuring operating characteristics of the lights, such as current, voltage, or even intensity, as claimed in the present invention. In one embodiment, Norman teaches measuring whether a light's intensity has been set correctly by a lamp control unit 35, but even this teaching, which discloses measuring the setting of the lamp control unit 35, fails to describe measuring the actual intensity of any of the lights, see col. 6, lines 40-44. In other words, whereas the Norman reference only measures the binary attribute of the "operational status,"—to which the result is "operative" or "inoperative"—the present invention claims the more subtle measurement of "electrical operating characteristics" including current and voltage.

3. Displaying the Operative Status of a Luminaire

Claim 1 of the present invention also requires displaying an indication of the operative characteristics of a luminaire. Norman fails to disclose this limitation.

Norman merely teaches depicting the status of the entire plant on a screen 6 or printer 10, see col. 6, lines 6-9. A field lighting plant for airports, as described by Norman, is made up of various modules, including lighting electronic units, loop computers, concentrators, and modems, see col. 2, lines 31-39. Accordingly, depicting the "status of the plant" on a monitor does not disclose displaying the operative status of an individual luminaire as claimed in the present invention.

CLAIM REJECTIONS UNDER 35 U.S.C. §103

Claims 5, 9-14, 19-24, 28, 29, and 35-37 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Norman. Because the Norman reference does teach or suggest all of the claim limitations, and because there is no suggestion or motivation to modify Norman, Applicant respectfully opposes this rejection.

The remaining claims were rejected under 35 U.S.C. § 103(a) as being unpatentable as follows: claims 3, 6, 7, 15-17, 25-27, 31-34, and 39-43 over Norman et al. in view of Grebe et

al., U.S. Patent No. 5,973,616, claim 4 over Norman in view of Chen, U.S. Patent No. 6,060,994, or Petite, U.S. Patent No. 6,218,953, claims 8, 30, 38 over Norman in view of Hamm, U.S. Patent No. 5,774,052, and claim 18 over Norman in view of Pavarotti, U.S. Patent No. 5,644,304. Because the combination of Norman and each of these additional references also fails to teach or suggest all of the claim limitations, and because there is no suggestion or motivation to combine Norman with these references, Applicant respectfully opposes these rejections.

1. Prior Art Must Teach or Suggest All Claim Limitations

Section 2143 of the MPEP provides in part, "To establish a prima facie case of obviousness ...the prior art reference ... must teach or suggest all the Claim limitations." (emphasis added). Section 2143 of the MPEP provides in part, "To establish a prima facie case of obviousness ... the prior art reference ... must teach or suggest all the Claim limitations." (emphasis added). Because the art of record, alone or in combination, fails to teach or suggest all of the claim limitations, Applicant respectfully requests that the Examiner's §103 rejections be withdrawn.

As shown in the discussion of the 35 U.S.C. §102 rejections above, the art of record does not teach or suggest all claim limitations of independent claim 1, and because the dependent claims include all of the limitations of the independent claims from which they depend, the art of record also does not teach or suggest all claim limitations of dependent claim 5.

a. Claims 9, 12-14, 21-24, and 35: Norman

Claims 9, 12-14, 21-24, and 35, each requires a luminaire monitoring system that measures various electrical operating characteristics of a luminaire. Norman fails to teach or suggest such a measurement of electrical operating characteristics. As asserted above, Norman merely teaches measuring the operational status of a light, operative or inoperative.

Further, Norman also fails to teach or suggest the specific requirement of claims 9, 12-14, 21-24, and 35 of measuring current flow and voltage levels of a luminaire. Specifically, claims 9 and 12-14 require detecting the electrical current flowing through a luminaire and the voltage across a luminaire; claims 21-24 require determining the electrical operating characteristics of a luminaire including current flow and voltage levels; and claim 35 requires sensing the current and voltage at an input and output of a luminaire.

In the August 14, 2002 Office Action, the Examiner asserts that the AE unit 18, or "lighting electronic unit," of Norman is "known in the art to include current and voltage measuring devices..." Applicant respectfully disagrees that the term "lighting electronic unit" has a specific meaning that includes a voltage and current measuring device. Nowhere does Norman or the other cited art define "lighting electronic unit" in such a way. The Examiner also

alleges that measuring current flow and voltage levels would have been obvious because Norman teaches a "voltage regulator," and the Examiner asserts that a voltage regulator "inherently includes a voltage measuring device." As is known in the art, voltage regulators are typically circuits that lower an incoming load to a specific level that can be used by another circuit. Changing a voltage load by a set amount is distinct from measuring the voltage as claimed in the present invention. Even assuming arguendo that a voltage regulator measures voltage as asserted by the Examiner, the claim limitation of measuring current has still not been met.

b. Claims 28 and 36: Norman

As asserted above, Norman fails to teach or suggest all of the claim limitations of claims 21 and 35. Accordingly, since claims 28 and 36 incorporate all of the limitations of claims 21 and 35 respectively, Norman also fails to teach or suggest all of the claim limitations of dependent claims 28 and 35 as well.

Additionally, claims 28 and 36 require a display or display means for providing a visual indication regarding the operational status of the plurality of luminaires. However, as shown above Norman merely teaches depicting the status of an entire plant on screen 6 or printer 10, see col. 6, lines 6-9. A field lighting plant for airports, as described by Norman, is made up of various modules, including lighting electronic units, loop computers, concentrators, and modems, see col. 2, lines 31-39. Accordingly, depicting the "status of the plant" on a monitor does not disclose displaying the operative status of each individual luminaire as claimed in the present invention.

c. Claims 5, 10, 11, 19, 20, 29, and 37: Norman

Claims 5, 19, and 20 claim controlling an "associated system" or "related system." For instance, in the context of an automatic teller machine, "if it is determined that insufficient illumination is provided to create a safe atmosphere, the control may cause the ATM to become disabled, thus preventing its subsequent use until the luminaire is repaired," Specification, p. 3, lines 17-33. Norman fails to teach or suggest these limitations.

First, the battery backup is not an "associated system" or "related system" as claimed in claims 5, 19, and 20, but rather the battery backup is clearly a part of the same system as the rest of the field lighting plant system disclosed by Norman. The Norman reference discloses at col. 6, lines 64-68, "By each lighting having its individual regulator, at least certain lightings can advantageously be fitted with battery backup..." Importantly, the battery backups described by Norman are fitted to individual lightings to provide a second energy source in the event of a voltage failure. Such battery backups are not "associated systems" or "related systems" that are

accessed by the field lighting plant system of Norman, but rather the battery backups clearly an integrated part of the overall field lighting plant system.

Further, claim 5 claims controlling an “associated system” when “the control unit determines that the luminaire is inoperative and a backup means is not available.” Norman fails to teach or suggest this limitation. In contrast, Norman only describes controlling a battery pack when there has been a voltage failure in a lamp, see col. 6, lines 64-68. However, the battery pack is clearly a backup means, and, therefore, Norman fails to teach controlling a related system when no back means is available.

Claims 19 and 20 require that the related system includes the luminaire and that the control signal provided to the related system includes information to alter the operation of the related system. For instance, in the case of a traffic signal, when the controller determines that a luminaire has become inoperative, the controller may send signals to cause the traffic signal to flash red lights. In contrast, the Norman reference teaches a battery backup to a lamp. This description fails to teach or suggest a related system that includes a luminaire. Even assuming the battery backup is a “related system,” Norman describes that the battery backup provides continued lighting in the even of a voltage failure. The light is not included in the battery backup. For this additional reason, Norman fails to teach or suggest the claim limitations of claims 19 and 20.

Similarly, claims 29 and 37 require a master controller that provides control signals which affect the operation of a related device based on the condition of the luminaires. Norman fails to teach or suggest this limitation. In contrast, the Norman reference describes providing a battery backup based on a voltage failure, not based on any condition of the lamps. Indeed, merely detecting an inoperative lamp (i.e., a condition of the lamp) would not accurately assess whether to activate the battery backup; such a determination would require determining whether the regular voltage supply is operative.

d. Claims 3, 6, 7, 15-17, 25-27, 31-34, and 39-43: Norman and Grebe

As asserted above, Norman fails to teach or suggest all of the claim limitations of claims 1, 9, 21, and 35. Accordingly, since claims 3, 6, 7, 15-17, 25-27, 31-34, and 39-43 incorporate all of the limitations of claims 1, 9, 21, and 35 respectively, Norman also fails to teach or suggest all of the claim limitations of dependent claims 3, 6, 7, 15-17, 25-27, 31-34, and 39-43 that are incorporated from claims 1, 9, 21, and 35. Thus, the combination of Norman and Grebe fails to teach or suggest all of the limitations of these dependent claims.

Additionally, claims 3, 15, 17, 25-27, 42, and 43 generally require a transmitter connected to the controller and a receiver connected to the monitor so that the controller and monitor may communicate with each other. In contrast, the receiver and transmitter of Grebe are

clearly both attached to the same controller 18 and receive signals to and send signals from the controller, not to and from each other, see U.S. Pat. No. 5,631,635, Fig. 1, Col. 2, lines 54-58, Col. 3, lines 15-18. Nowhere do Norman, Grebe, or the combination thereof teach or suggest a transmitter connected to a controller and a receiver connected to a monitor so that the controller and monitor may communicate with each other.

Further, claims 6, 7, 31-34, and 39-41 generally require an associated system or related device that is a traffic signal, street light, or automatic teller machine. The Examiner asserts that Norman teaches controlling or activating a backup system in response to a luminaire failure, where the backup system includes a second system of luminaires, which could be a traffic signal as described in Grebe. Applicant respectfully disagrees with this reading of Norman. The Norman reference only describes controlling a battery pack when there has been a voltage failure in a lamp, but does not mention a second set of luminaires in this context, see col. 6, lines 64-68. Nowhere does Norman teach or suggest this limitation.

e. Claim 4: Norman and Chen/Petite

As asserted above, Norman fails to teach or suggest all of the claim limitations of claim 1. Accordingly, since claim 4 incorporates all of the limitations of claim 1, Norman also fails to teach or suggest all of the claim limitations of dependent claim 4 that are incorporated from claim 1. Thus, the combination of Norman and Chen/Petite fails to teach or suggest all of the limitations of claim 4.

f. Claims 8, 30, 38: Norman and Hamm

As asserted above, Norman fails to teach or suggest all of the claim limitations of claims 1, 21, and 35. Accordingly, since claims 8, 30, and 38 incorporate all of the limitations of claims 1, 21, and 35 respectively, Norman also fails to teach or suggest all of the claim limitations of dependent claims 8, 30, and 38 that are incorporated from claims 1, 21, and 35. Thus, the combination of Norman and Hamm fails to teach or suggest all of the limitations of these dependent claims.

g. Claim 18: Norman and Pavarotti

As asserted above, Norman fails to teach or suggest all of the claim limitations of claim 9. Accordingly, since claim 18 incorporates all of the limitations of claim 9, Norman also fails to teach or suggest all of the claim limitations of dependent claim 18 that are incorporated from claim 9. Thus, the combination of Norman and Pavarotti fails to teach or suggest all of the limitations of claim 18.

2. No Suggestion or Motivation to Combine the Cited References

Applicant respectfully submits that the objective tests for patentability set out in *Graham v. John Deere Co.*, 383 U.S. 1 (1966), have not been met by the Examiner because a prima facie case of obviousness has not been established, as is required, for the additional reason that there is no suggestion or motivation to combine the cited references. In *re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). The cited references do no more than disclose some of the various elements that appear in the present Application, none of which either alone or in combination meet the limitations of claims 3-43. Merely because various elements are shown in the prior art is insufficient to support a rejection of the present claims under 35 U.S.C. § 103, and Applicant respectfully submits that this does not establish a prima facie case of obviousness.

a. Norman Reference

Moreover, MPEP § 2143.01 further provides that there must be a basis in the art for combining or modifying references, and the “mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.” Establishing a prima facie case of obviousness requires more than “common knowledge” or “common sense.” Rather, the Federal Circuit insists on a specific rationale for combining references and that a finding of obviousness be based on objective evidence of record. In *Re Lee*, 61 U.S.P.Q.2d 1430.

Such “specific rationale” or “objective evidence of record” to combine these various cited references is lacking from the present § 103 rejections. For instance, as shown above, the present invention claims measuring the electrical operating characteristics of a luminaire, including the specific characteristics of current flow and voltage levels of a luminaire. In contrast, Norman merely teaches measuring whether a lamp is operative or inoperative. Further, as also shown above, the responses to such lamp measurements taught by Norman are directed towards reacting to an inoperative light, e.g. illuminating one light when another fails and activating a battery backup when the voltage to one of the lights fails.

Accordingly, there would be no motivation to modify Norman to measure luminaire characteristics beyond the operative/inoperative measurement, such as current flow and voltage levels as claimed by the present invention. Given the responses taught by Norman, measuring the voltage or current would be useless. Further, the source for the motivation to combine references must come from “the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art.” MPEP 2143.01. However, neither the art of record nor the Examiner has described the nature of the problem to be solved, the teachings of the prior art that lead to such motivation, or the knowledge of persons of ordinary skill in the art that would lead to such motivation to modify this reference.

b. Norman and Grebe References

The Examiner asserts that it would have been obvious to one skilled in the art to combine the Norman and Grebe references to teach transmitters and receivers that provide quick assistance for dangerous situations and changing the operational status of a traffic light to provide an emergency response to a light failure, as claimed in claims 3, 6, 7, 15-17, 25-27, 31-34, 39-43. The Examiner further asserts that "A specific motivation to combine the prior arts is here not needed..." Applicant respectfully disagrees.

As noted above, the Federal Circuit in *In Re Lee* requires a "specific rationale" for combining references and that a finding of obviousness be based on "objective evidence of record." The Examiner does not identify any motivation to combine these references, nor does the Examiner describe why this would be a desirable improvement to Norman or what problem of Norman one would be attempting to solve with such a combination. Moreover, all inventions are a combination of elements that already exist. If claims are to be rejected on the basis that its several elements are mentioned in prior art, no claims would ever be allowed. Thus, the prior art must suggest and provide an incentive for the proposed combination. "[I]t is irrelevant in determining obviousness that all or all other aspects of the claim may have been well known in the art." *Jones v. Hardy*, 727 F.2d 1524 (Fed. Cir. 1984).

3. § 103 Rejections are Therefore Improper

For the above-indicated reasons, Norman and the various other cited references, each alone, or in combination, fail to disclose or suggest all claim limitations in accordance with MPEP 2143. Moreover, the requisite suggestion or motivation to combine these references is also lacking. Accordingly, Applicant respectfully requests withdrawal of the 35 U.S.C. § 103(a) rejections.

Conclusion

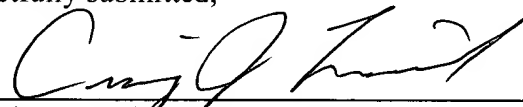
Applicant submits that all pending claims are now allowable and respectfully requests that a Notice of Allowance be issued in this case. If the Examiner believes that a conference would be of value in expediting the prosecution of this application, the undersigned can be reached at the telephone number listed below.

Attached is a marked up version of the changes made to the specification by the current amendment. The attached page is captioned "Version with markings to show changes made." For the Examiner's convenience, the pending claims have also been included on the attached page captioned, "Pending Claims."

A Petition for a Three Month Extension of Time is being submitted with this Amendment and Response to Office Action. No other fees are believed to be due at the present time, however, should any fees be required the Commissioner is authorized to charge any filing fees associated with this communication to Deposit Account No. 50-1901 (Reference #17924-301).

Respectfully submitted,

By



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VERSION WITH MARKINGS TO SHOW CHANGES MADE
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IN THE CLAIMS

Please cancel claim 2. Please amend claims 1 and 5 as follows:

1. A monitoring system for a luminaire, comprising:
 - a sensing unit attached to the luminaire so that the sensing unit can measure the electrical operating characteristics of the luminaire, wherein the electrical operating characteristics include the current and voltage at each of the input and the output;
 - a control unit operatively coupled to the sensing unit to receive measurements from the sensing unit;
 - a monitor operatively coupled to the control unit to display an indication of the operative status of the luminaire.

5. The monitoring system of claim 1 wherein the control unit acts to control an associated system, that is associated with the luminaire, when the control unit determines that the luminaire is inoperative and a backup means is not available.

Please add claim 44 as follows:

44. The monitoring system of claim 1 wherein the frequency at which the sensing unit measures the electrical operating characteristics of the luminaire is increased when the control unit determines that the luminaire is operating at less than a predetermined efficiency.